

Analysis of Chemical Hazards at INEEL

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Introduction

- The purpose of this discussion is to identify how DOE-ID evaluates hazardous chemicals in Safety Analysis.
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Topics of Discussion

- Requirements of DOE-ID Order 420.D
- For Nuclear, Non-nuclear and Radiological Facilities
- Takes Place of DOE O 5481.1B of 9/86
- Applies to All INEEL Activities

Hazard Assessment

- Performed for all Facilities and Operations on INEEL
- Threshold guidelines established by operating organization
- DOE approval not required

Risk Evaluation Guidelines

- Risk Evaluation Guidelines are used to determine if Safety Class or Safety Significant SSCs are required.

Hazard Classification

Low Hazard

- Performed for those hazards requiring further analysis and documentation. Follows EM Std 5502-94
- Low hazard facility could not have material at risk MAR that meets or exceeds 29CFR1910.119 or
- 40CFR355 thresholds

Facility Classification

Moderate Hazard

- Facilities or activities that have potential off-site consequences that exceed low hazard threshold criteria and;
- Could not result in injuries to 10 people or 5 fatalities from a single event on site;
- Or injuries to more than 5 people off-site;

Moderate Hazard Facility Activity Classification Continued

- Result in an off-site release that is IDLH;or
- Could not result in substantially irreversible environmental degradation

High Hazard Facility

- One hazard exceeds the upper threshold criteria for moderate hazard and
- Contains Hazards that have the potential for significant off-site consequences

Operational Safety Requirements

- Operational Safety Requirements are necessary for high or moderate hazard non nuclear facilities and are DOE-ID approved
- OSRs address safety SSCs and management and administrative controls necessary for safe operation
- OSRs can place limits on *process variables* that are conditions for design basis accidents

Risk Guidelines

Event Frequency	Worker consequences	Public Consequences
Anticipated (1E-01 to 1E-02/yr)	ERPG-1 or Equivalent	TLV-TWA
Unlikely (1E-02 to 1E-04/yr)	ERPG-2 or Equivalent	ERPG-1 or Equivalent
Extremely Unlikely (1E-04-1E-06/yr)	ERPG-3 or Equivalent	ERPG-2 or Equivalent

Next Steps

- INEEL analyzes chemical hazards against industry standards in both Nuclear and Non Nuclear SARs
- Our Evaluation Guidelines are consistent across the site and apply to all facilities and activities
- DOE-ID approves hazard classifications and high Hazard operations and mitigations